Economic Growth, Unemployment, and Human Development on Poverty in North Sumatra Province in 2011-2020

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Article Information

A B S T R A C T

National development that is running in Indonesia is expected to create an even distribution of welfare so that no one is left behind and experiences poverty. However, the fact is that the development only touches the interests of certain groups and the results can only be enjoyed by a few people. This study aims to analyze the effect of economic growth, unemployment and human development on poverty levels in North Sumatra during 2011-2020. The analytical method used in this research is panel data regression with Random Effect Model (REM). The results showed that economic growth and human development had a negative and significant impact on poverty in North Sumatra Province. In contrast to the results found in unemployment, this variable has no statistically significant effect on poverty in this province. The results of this study are expected to be able to enrich references in reducing regional poverty levels. There is a need for government intervention to increase economic growth and human development. Increasing economic growth can be done by expanding job opportunities, especially during the current covid pandemic, while increasing human development can be intervened through education subsidies, and cheap health services, especially for the poor.

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INTRODUCTION

Every country expects development in its territory. The development brings the country to a better condition (Todaro, 2011). This development is expected to provide improvements in all aspects, both social, economic, and institutional. State development is said to be successful if poverty decreases (Setiyorini, 2017). The decrease in poverty means that more people live in prosperity. A prosperous person means being able to meet their needs independently (Wirawan & Arka, 2015).

National development that is running in Indonesia is expected to create an even distribution of welfare so that no one is left behind and experiences poverty. However, the fact is that development only touches the interests of certain groups and the results can only be enjoyed by a few people (Solikhatun & Masruroh, 2014). Development is expected to reach all levels of society. However, development in Indonesia has not yet reached the low-spending layers of society. This can be seen in Indonesia's poverty condition which has increased in 2020. March poverty data released by the Central Statistics Agency (BPS) in 2020 shows an increase in the percentage of poor people from 9.41 percent to 9.78 percent in 2020, in other words, poverty increased by 0.37 percent. The development is expected to create an increase in welfare, but in fact, more and more people are experiencing poverty based on poverty data.

Poverty does not only occur in Indonesia but is also a worldwide problem. This can be seen in the formation of a global agreement to fight poverty, known as the Sustainable Development Goals (SDGs). The urgency of the problem of poverty is seen in the first goal of this agreement, namely eliminating poverty worldwide. The achievement of this agreement will occur if strategies are found that can accelerate poverty reduction.

North Sumatra, which is one of the provinces in Indonesia with the fourth largest population in Indonesia, namely 14,798,400 people (BPS data from the 2020 population projection) with poverty rate 8.75 percent or 8.75 percent of the total population lives in poverty. The percentage is not the highest and still below the national level. However, the number of the poor in this province based on BPS data March 2020 about 1,283,290 people, making this province one of the top ten provinces with the highest number of the poor in Indonesia. It is also the highest number among the provinces on the island of Sumatra. Poverty in North Sumatra has decreased but relatively slow in the last 5 years based on BPS 2015-2020 data, where the poverty rate in 2015 was 10.53 and decreased by 1.6 percent for 5 years. The challenge of alleviating poverty in the first goal of SDGS in 2030 will be a tough one considering that the reduction in poverty every year is very slow. Therefore, it is very important to accelerate poverty reduction in this province.

Poor is defined as very complex and diverse. Khomsan et al (2015) defines poverty as the inability to meet basic to survive. Bappenas (2018) also defines poverty as a person's inability to fulfill the right to survive and develop their welfare. If a person can survive but in meeting the basic needs for a decent life as a human being has difficulties or limitations, then that person can be said to be poor. The basic needs are not only food also non-food such as health, housing, clothing, and education. The poverty rate is usually calculated using various approaches but the monetary approach is the method that is often used in calculating the poverty. Monetary/economic approach calculate poverty through ability to meet basic needs (food and non food). In calculating poverty, it is necessary to classify the poor and the non-poor. BPS as an institution that calculates poverty in Indonesia with

this approach. BPs classify the poor using the approach poverty line as a cut-off point The poverty line is the minimum expenditure on food and non-food that a person must spend to live a decent life for a month. People with monthly per capita expenditure below the poverty line are called the poor.

Poverty is the beginning of the emergence of social problems for economic reasons (Suliswanto, 2010). Two of them are the increase in dropouts and crime rates. Children who live in poor households have economic limitations causing the role of children to shift in the family. Children who should be in school are forced to work to earn money to help the family's economy. Children who cannot divide their time between school and work prefer to dropout. Dropping out of school cutts off acces to accumulate better knowledge and skills through education. The decision to work earlier to improve welfare will trap them in a cycle of poverty but higher education helps them achieve prosperity in the future. In the labor market, people with better education, better knowledge and skills earn higher wages. Therefore, The educational achievement causes income inequality between workers (Wahyuni and Monika, 2016).

The second social problem is the increase in crime. The poor conditions experienced trigger increased levels of stress and mental disorders that encourage people to behave criminally (Khan et al, 2015). Economic limitations to meet a decent standard of living encourage someone to commit crimes such as stealing, extorting, robbing, and even killing in order to survive. Their economic limitations cause them to no longer think about violations of norms and values in society so that the crime rate increases. it becomes a new problem that adds to the unresolved poverty problem.

Impact of poverty is driving the importance of research on poverty reduction, especially in areas that have high poverty. It is important finding related to reduction the poverty rate. Several previous studies in Indonesia have been found several factors that influence the poverty level of a region. Some of them are economic growth, unemployment and HDI (Amaluddin,2019; Andhyka et al, 2018; Serran, 2017; Suliswanto, 2010), which are also independent variables in this study.

The growth model explains that economic growth occurs when economic inputs increase. A growing economy shows an increase in the value of the output produced which reflects an increase in income. Economic growth will be successful in reducing poverty if the results are enjoyed by all levels of society.

Economic growth is characterized by an increase in the production capacity of goods and services in a region. Approach to the economic growth of a region can be done through the gross regional domestic product (GRDP). The increase in GRDP over a period of time indicates that the region is experiencing economic growth otherwise if it decreases, it is called contraction. The Department for International Development (2018) states that economic growth plays a role in encouraging the speed of poverty reduction. This statement was issued based on a study of 14 countries in the 1990s, it was found that 11 countries with high economic growth experienced a reduction in poverty, while 3 countries with slow economic growth conditions or no growth at all experienced an increase in poverty.

Several previous studies that analyzed the relationship between growth and poverty in Indonesia such as Amaluddin (2019) found that growth has a negative relationship with poverty. Different results were found by Andhyka et al (2018) where economic growth has a positive relationship with poverty. Different results from two previous studies, Zuhdiyati and Kluge (2017) found that these two variables

had no relationship. Therefore, it needs to be a recent study that examines the relationship between these two variable.

Amaluddin (2019) who conducted research on the relationship between economic growth and poverty in Indonesia during the 2010-2018 period using the PVECM (Panel Vector Error Correction Model) approach found a relationship between the two variables. This relationship occurs in the long run where economic growth reduces poverty. Garza-Rodriguez (2018) analyzed the relationship between economic growth and poverty in Mexico during the 1960-2016 period using cointegration analysis and VECM also found a negative relationship between economic growth and povert both in the short and long term. It can be concluded that a growing economy has an impact on reducing poverty.

In contrast to the two previous studies, Andhyka et al (2018) in their research in Central Java from 2011-2015 using panel data analysis found that economic growth has a positive relationship to poverty, in other words economic growth causes an increase in the poverty rate. This positive relationship between economic growth and poverty explains that growth itself cannot be felt by the poor, so that the more the economy grows, the wider the inequality.

Another finding that is different from previous research is also found by Zuhdiyati and Kluge (2017) in Indonesia in 2011-2015 where growth in economic growth has no effect on poverty. This study suspects that this occurs because the quality of economic growth that occurs is poor so it does not reduce poverty. The poverty decline through economic growth will be successfully achieved if there are available jobs (Todaro, 2011). More jobs will help all groups of people improve their welfare.

Unemployment and poverty are also an interesting discussion where unemployment can be the reason someone is poor. Mankiw (2016) mentions unemployment occurs that the supply of labor is greater than the demand for labor. Unemployment makes a person without a job and no income as well. People who have no income experience limitations in meeting their needs which ultimately leads to a decline in living standards (Mankiw, 2016). Loss of income had to be responded to by a decrease in consumption in the long term creates new problems, namely experiencing poverty (Sukirno, 2006; Andrini and Auwalin, 2019; Zuhdiyati and Kluge, 2017). It can be concluded that an increase in unemployment has an impact on increasing the number of poor so that the poverty rate increases.

Empirical studies about the relationship between unemployment and poverty has been carried out before. One of the studies relationship between unemployment and poverty in 2000-2016 conducted by Serran (2017) found a positive relationship between these two variables. When unemployment increases, poverty will increase too. This finding is in line with that found by Wirawan and Arka (2015). The study found where a change in the rate of unemployment increase of 1 percent resulted in an increase in the number of poor people by approximately 1,628 people. Another study found results that were different from the two previous studies, Zuhdiya and Kluge (2017) found between two variables had no relationship. In this study, it is stated that people who are unemployed may not experienced poverty, they may still be supported by others so that they can meet their basic needs while they are unemployed. Cases like this often occur, those who are unemployed do not experience poverty because their relatives are still able to meet their needs until they are released from this condition (Giovanni, 2018). The relationship between the two variables found in several studies that are still ambiguous is an interesting topic for

further analysis which enriches references on this topic using the latest data.

Research on poverty is inseparable from the humans themselves, especially human capital. The quality of human capital possessed by the workforce is one of the important factors needed in production activities. Workers with good human capital have higher productivity. This productivity have a positive impact on output. The higher the productivity, the output also increases. Increased output indicates increased income, and increased income leads to better welfare. it can be said that good human capital reduces the possibility of experiencing poverty.

The theory of endogenous growth emphasized that this growth will be faster if there is a rapid and equitable increase in human capital and the technology in it. Better human capital shows an increase in the quality of education and better health which causes the potential income of the community to be higher and more prosperous (De silva & Sumarto, 2014). However, it is hoped that this increase in education and health will occur evenly, especially for the poor, so that poverty will decrease (Todaro & Smith, 2011).

Serran (2017) argues that the most appropriate way to improve the quality of human capital is through formal education. Formal education can be obtained through schools. By going to school, a person not only gets the transfer of knowledge but also develop basic skills (UNICEF, 2020). Poor people have limited access to school because of economic reason. Therefore, those with low education also have low knowledge and skills. It causes their productivity to be low so that the economic output they produce is also low. As a result, the income received by the poor will be lower. It caused the poor can not get out of poverty and trapped in the cycle of poverty (Serran, 2017).

Through schooling, the poor can improve their welfare so that they have better job opportunities, salaries and careers in the future (Furia et al., 2010; UNDESA, 2018).The increase in knowledge and skills of the workforce leads to an increase in the productivity of the workforce. It makes workers with high productivity have a greater chance of getting a job and a better income (Awan et al, 2011). Better income will reduce the person's chances of experiencing poverty. The effect of education on poverty can be seen in research by Awan et al (2011) which found a negative relationship, the higher the education the more effective it is in reducing a person's risk of experiencing poverty. Dartanto & Nurkholis' (2013) research also found the same result, namely education through higher years of schooling can reduce a person's risk of experiencing poverty, especially chronic poverty.

Another invesment in human capital is in health. Investment in education cannot be separated from health. Health improvements lead to a longer life so that the time to enjoy a return on education investment is longer (Todaro, 2011). Health affects a person's well-being. Healthy people will have more frequent attendance at work so that they receive higher wages than those who have poor health. Large wages encourage an increase in consumption which will ultimately increase welfare.The human development Index (HDI) is often used as a measure of the development of the quality of human capital the index is compiled based on 3 main indicators which include education and health. A high HDI in a region indicates a better quality of life for the people living in it.

Several previous studies that observed the relationship between human capital and poverty. One of them is research by Fadlilla et al (2016) in Central Java 2009-2013 found human development has a negative influence on poverty in Indonesia. The study using

HDI as indicator human capital. It found An increase in HDI leads to a reduction in existing poverty. In the study, it was found that the magnitude of the reduction in poverty that occurred as a result of a 1 percent increase in human development almost 0,05 percent. Other studies about relationship HDI and poverty conducted by Suliswanto (2010) in Indonesia found the same results as before where HDI was able to reduce poverty.

Research on poverty that is influenced by macro-regional variables in the province of North Sumatra has been carried out, but most of these studies analyze poverty with core-sectional data. Therefore, this study sees the importance of analyzing regional poverty in aggregate with panel data that does not only analyze poverty at one time, because poverty is a complex problem and requires a long time to overcome. Based on previous descriptions of the variables that affect poverty, this study is interested in analyzing relationship variables of economic growth, unemployment, and human development Index on poverty level in North Sumatra during 2011-2020. The novelty of this research is the methodology Panel regression, panel data used is still rare on this topic in North Sumatra and the HDI variable which is used as an approach education and health variable approach. HDI that used in this study is the result of a new calculation method which is possible in previous research still using old method calculation data. In addition, the data used in this study is the most recent data and is expected to complement research on the topic of poverty.The results of this study, it is hoped that it will produce suggestions for the government regarding poverty reduction, especially in North Sumatra.

METHODOLOGY

The data in this study uses secondary data from the Central Statistics Agency. The data used is panel data. Panel data is a combination of cross-sectional data with time series. The cross-sectional data in this study consisted of 33 districts/cities in North Sumatra Province. While the time series used in the data is 2011-2020.

The dependent variable in this study is poverty which is obtained from the data on the percentage of poor people in districts/cities in North Sumatra Province. The first independent variable is economic growth which is approximated by GRDP constant price. The second independent variable is unemployment obtained from open unemployment data. The third independent variable is human development which is obtained from human development data. In this study, the first independent variable underwent a transformation to the natural logarithm form (ln).

The analytical method used in this study is panel data regression. There are 3 models that can be used in estimating the parameters of the panel data, namely: Pool Least Square (PLS), Fixed Effects Model (FEM), and Random Effects Model (REM). In determining the model to be used in estimating the parameters, it is necessary to test the selection of the model. The model selection tests conducted in this study are as follows:

1. Chow test.

The Chow test is used to test whether the PLS model or the FEM model is better used in estimating the parameters. Decision-making is done by comparing the p-value (probability value) generated in this test. If the p-value is less than the significance level (0.05), the decision on the test is that the FEM model is the model chosen for estimating the parameters.

2. Hausman test

If the results of the Chow test state that the FEM model is the right model to estimate, it is necessary to retest the Hausman test. This test is used to select whether the FEM model or the REM model is the most suitable for estimating the parameters. If the resulting p-value is smaller than the

significance level, the decision is that the model chosen is the FEM model.

3. Lagrange Multiplier Test (LM)

If the results of the Chow test of the selected model are PLS or the results of the Hausman Test of the selected model are REM, it is necessary to test the model again, namely the LM test. In this test, the models tested are PLS and REM. If the resulting p-value is smaller than the significant level, the model selected in this test is REM.

The basic model used in panel data regression in this study is written as follows:

$$y_{it}=\beta_0+\beta_1 \ln X_{1\,it}+\beta_2 X_{2\,it}+\beta_3 X_{3\,it}+\varepsilon_{it}\ldots\ldots(1)$$

Where:

X1 is economic growth; X2 is the open unemployment rate; X3 is human development; subscript it is an error in the model; I is the district/city and t is the time.

RESULT AND DICUSSION

The results of the panel data regression model selection test in this study showed that: in the Chow test, the chosen model to estimate the parameters was the FEM model. Therefore, it is necessary to select the next model, namely the Hausman test. In the Hausman test conducted in this study, the results obtained were the REM model was the selected model. It is necessary to re-test the model because in the Hausman test the selected model is REM. The last model test, namely the LM test, resulted in the selected model being REM. Therefore, it was decided that the most suitable model for estimating the parameters in this study is the REM model.

Results Based on the test parameters on the random effects model, the decision was that overall the independent variables in the study had a statistically significant effect on the poverty level in North Sumatra Province. This can be seen from the results of the p-value which is smaller than the significance level (0.05). The results of the partial test show that the human development variable and the economic growth variable have a significant effect on poverty in North Sumatra Province. The unemployment rate variable has no significant effect on the poverty level in North Sumatra Province in this study. The description of the results of testing these parameters can be observed in table 1

Table 1.
Panel Regression Result

Variable	PLS	FEM	REM
C	64,72461***	35,56288***	37,87482***
	(3,200943)	(2,660286)	(2,673211)
Lnx1	-1,217155***	,0350693***	-0,7362311***
	(0,2425144)	(0,0526887)	(0,214251B)
x2	0,2031079	-,6999036	0,0202932
	(0.0811899)	(0,2199462)	(0,0520391)
X3	-0,6275497***	-,254592***	-0,2826005***
	(0,0560557)	(0,0478215)	(0,046671)
Restricted F test		0,0000	
Prob Hausman test		0.9870	

(...) Standar Error
*,**,*** Significant at leve 10%, 5%, 1%

Based on the results in table 1 above, the analysis model for the influence of the open unemployment rate, HDI and GRDP on the poverty rate in North Sumatra is formed as follows :

$$\widehat{Y_{it}} = 37,87482 - 0,7362311 \ln PDRB_{it} - 0,2826005 \ IPM_{it} \quad ....(2)$$

The results of panel data regression show that economic growth in North Sumatra Province has a negative and statistically significant effect on poverty levels. The results show that the economic growth that has occurred has had a significant impact on reducing poverty in North Sumatra. The economic growth variable in this study has undergone a transformation to the natural logarithm form (ln), the coefficient ln economic growth in the model formed is -0.7362311. This coefficient means that every 1 percent increase in economic growth will have an impact on reducing the poverty rate by 1.13 percent. This result is in line with the theory that states that there is a negative relationship between economic growth and poverty as found in the research of Garza-Rodriguez (2018); Amaluddin(2019). Economic growth occurs in an increase in the production capacity of goods and services of a region in meeting the needs of the population in the region. The increase in the production of goods and services is a response to an increase in demand, namely population consumption, this reflects an increase in purchasing power. The increased purchasing power of the population reflects the welfare of the population as well increase.

The unemployment rate variable in this study was found to have no statistically significant effect on influencing the poverty rate in North Sumatra Province. This result is not in accordance with the theory found by research (Wirawan and Arka, 2015; Serran, 2017) which found that unemployment has an effect on poverty.

Zuhdiyati and Kluge (2015) dan Giovanni (2018) argue that unemployment has no effect on poverty because those who are unemployed will not experience poverty as long as there is other relative who want to share their welfare by fulfilling their needs.

The human development variable in this study was found to have a statistically significant effect on poverty conditions in North Sumatra Province. In equation (2) above, the coefficient of human development is -0.2826005. This coefficient shows human development has a negative relationship on poverty in North Sumatra Province. This means that if human development index increases by 1 unit, it will cause a decrease in poverty of 0.2826005 percent. The relationship between these two variables is in line with the theory and those found in previous studies such as research of Fadlilla et al (2016) and Suliswanto (2010). These results can also be concluded that the increase in human development indicates an increase in the quality of human resources both in terms of education and health. Therefore, reducing poverty can be done by improving the human development index which is an improvement in income distribution, education and health.

CONCLUSION

The results of the partial test show that the human development ndex (HDI) and the economic growth have a significant effect on poverty in North Sumatra Province. However, The unemployment rate found has no significant effect on the poverty level in North Sumatra Province in this study. The results of panel data regression show that economic growth in North Sumatra Province has a negative and statistically significant effect on poverty levels. It means Economic growth can reduce poverty.

The human development variable in this study was found to have a statistically significant effect on poverty conditions in

North Sumatra Province. The relationship formed is a negative relationship. The increase in human development Index indicates an increase in the quality of human capital both in terms of education and health. Therefore, access to education and health in this province must increase reduce poverty.

The results of this study are expected to be able to enrich references in reducing regional poverty levels. There is a need for government intervention to increase economic growth and human development Index. Increasing economic growth can be done by expanding job opportunities, especially during the current covid pandemic and post pandemic era. There is a program to provide training for the work force as a provision to work both in the formal and informal sectors. However, there needs to be more support to revive usaha mikro kecil dan menengah (UMKM) through loan incentives that are low on interest, considering that UMKM are businesses that are relatively more resilient during times of crisis and the fastest to recover after a crisis.

Increasing human development can be intervened through education subsidies so that the quality of education is getting better because the level of public education is increasing. it is necessary to subsidize cheap medical treatment or even health protection that guarantees the health of the poor, so that those who are sick are not afraid of seeking treatment because of the high cost.

This research has many limitations. The limitations exist in the relatively small number of independent variables. The more independent variables used, the more factors associated with poverty are found. Also in this study, economic growth uses a simple approach with GRDP every year without considering the amount of growth occurring so that it cannot be concluded whether the greater the growth, the greater the impact on poverty reduction or vice versa.

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